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SOCIO-ECONOMIC DIMENSION OF FISH FARMING IN ASSAM

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ABSTRACT

Information on socio-economic framework of the fishfarmer community forms a benchmark for policy formulation to develop this economically backward sector. Very few studies have been conducted on the socio-economic aspect of fish farming. Two districts of Assam, Darrang and Nagaon, were selected for this study where 120 respondents from each district were selected randomly. The characteristics representing the personnel and socio-economic attributes of the fishfarmers are presented in this paper. The socio-economic status of fish farmers has to be improved by bringing the modern concepts of fish farming to the doorstep of farmers.

Keywords: Socio-economics, fish culture

INTRODUCTION

The socio-economic characteristics pertaining to demography, means of production and investment, income and expenditure of people living in a particular location strongly influence their responses to technological changes and participation in development schemes. Lack of authentic information on the socio-economic condition of the target group is one of the serious impediments in the successful implementation of developmental programmes. In the fisheries sector, several micro and macro level socio-economic surveys had been conducted by various agencies and research workers in different regions of our country to study one or the other problem of the fishermen community (Desai and Baichval, 1960; Sen, 1973; Shambhu, 1973; Prakasham, 1974; De Silva, 1977; Lawson, 1977; Panikkar, 1980; Sathiadhas and Venkatraman, 1981; Rao and Kumar, 1984; Rao, 1986; Sathiadhas and Panikkar, 1988). However, attempts have not been made to carry out similar studies among inland fish culturists, particularly of Assam. Assam is situated in the north-eastern region of the country, has rich fishery resources in the form of riverine fisheries (combined length 4820 km), floodplain wetlands/*beels* (100,000 ha), ponds and tanks (25,000 ha), swamps (10,000 ha), forest fisheries (5,000 ha) and so on totaling to 347,000 ha. The resources are not fully tapped to fulfill the domestic demand for fish. Composite fish culture in the region is increasingly becoming popular

even though the recommended culture packages are not followed *in toto* in most cases. Keeping in view of all these reasons, the present study was an attempt to evaluate the socio-economic dimensions of fishfarming practices in Assam.

METHODOLOGY

The study was conducted in two districts of Assam, *viz.*, Darrang and Nagaon, during the period 1998-2000. A simple random sampling procedure was applied to select 120 respondents from each district. A structured interview schedule was developed incorporating all the queries to accomplish the objectives set for the study. The collected data were tabulated for statistical analysis.

RESULTS AND DISCUSSION

In the fisheries sector, socio-economic status of fishermen plays a key role in productive activities. Socio-economic parameters such as family size, age structure, customs, beliefs and habits, employment potentials, education and living standards of fishermen influence their response to new technology and their participation in development schemes. Studies on these variables attempt not only to explain the overall socio-economic conditions of the fishermen, but also to identify the factors constraining the realisation of the full potential of traditional fishery and the appropriate area for government intervention (Sathiadhas and Panikkar, 1988).

The interactions of personnel, psychological and situational factors always influence the earnings and the adoption of scientific fish farming. Hence, profile of the respondents is important to explain the possible relationships among different variables. Characteristics representing the personal and socio-economic attributes like family size and caste, housing, educational status and occupation are given in Table 1.

Family size and caste

A critical analysis of the data reveals that 20.00% of the respondents of Darrang and 8.00% respondents of Nagaon had small size of family consisting of four members. A majority of the respondents, *i.e.*, 80.00% of Darrang and 92.00% of Nagaon had large family size of more than four members. The caste pattern of the respondents shows that the majority of the respondents of Darrang (48.00 %) were from general castes followed by 20.00% of scheduled tribes (ST), 17.00% of other backward communities (OBC) and 15.00% of scheduled castes (SC). In Nagaon, the large majority of the respondents belonged to general castes (43.33%) followed by OBC (33.33%), SC (13.33%) and ST (10.00%). The size of the family has a direct influence on the expenditure and income patterns of the family and thereby influences fish production.

Housing

Housing pattern is one of the most important indicators used to assess the economic well-being of any community. On an average, 42% of the respondents in the sampled area of Darrang and Nagaon districts were still living in huts, whereas 52 and 6% were living in *kutcha* and *pucca* houses, respectively. A large number of

Table 1: Profile of the fish farmers

Attributes	Darrang F (%)	Nagaon F (%)	Total F (%)
Number of households studied	120	120	240
Average size of family			
a. Small	24(20.00)	10(8.00)	34(14.17)
b. Big	96(80.00)	110(92.00)	206(85.83)
Caste			
a. ST	24(20.00)	12(10.00)	36(15.00)
b. SC	18(15.00)	16(13.33)	34(14.00)
c. OBC	20(17.00)	40(33.33)	60(25.00)
d. General	58(48.00)	52(43.33)	110(46.00)
Housing pattern			
a. Hut	40(33.33)	60(50.00)	100(42.00)
b. *Kutcha*	70(58.33)	55(45.83)	125(52.00)
c. *Pucca*	10(8.33)	5(4.17)	15(6.00)
Literacy rate	96(80.00)	84(70.00)	180(75.00)
a. Primary (to 4^{th})	10(10.42)	16(19.05)	26(14.44)
b. Middle(5-7)	18(18.75)	20(23.81)	38(21.11)
c. High School(8-10)	44(45.83)	27(32.14)	71(39.44)
d. Pre-degree(11-12)	16(16.67)	15(17.86)	31(17.22)
e. Degree(>12)	8(8.33)	6(7.14)	14(7.78)
Major occupation			
a. Agriculture	62(51.67)	74(61.67)	136(57.00)
b. Fishery	20(16.67)	30(25.00)	50(21.00)
c. Business	30(25.00)	12(10.00)	42(17.00)
d. Service	8(6.67)	4(3.33)	12(5.00)
Age			
a. Younger (<36)	46(38.33)	48(40.00)	94(39.17)
b. Middle(36-50)	46(38.33)	62(51.67)	108(45.00)
c. Older (>50)	28(23.34)	10(8.33)	38(15.83)
Experience			
a. Low	18(15.00)	12(10.00)	16 (7.00)
b. Medium	80(67.00)	88(73.00)	184(77.00)
c. High	22(18.00)	20(17.00)	40(16.00)
Social participation			
a. Low	16(13.33)	12(10.00)	28(12.00)
b. Medium	92(76.67)	94(78.33)	186(78.00)
c. High	12(10.00)	14(11.67)	26(10.00)
Training			
a. Trained	30(25.00)	24(20.00)	54(22.50)
b. Non-trained	90(75.00)	96(80.00)	186(77.50)

respondents of Darrang and Nagaon, *i.e.*, 58.33 and 45.83%, respectively resided in *kutcha* houses. This reflects the poor living conditions of the people in the study area.

Educational status

Education is an important socio-economic factor, which has a lot of bearing on the fishfarming technology. With regard to the educational level of respondents, it could be observed that 75.00% of the respondents were literate, while only 25.00% were illiterate. In both the districts, the majority of the fish farmers were educated up to high school thereby indicating a medium level of education. However, a good percentage had education beyond high school. It implies that more number of literate farmers were involved in fish culture practices. It is quite interesting to observe that graduates are also taking part in fishfarming practices.

Occupation

The standard of living and earning of fish farmers depend on their occupation. It was observed that only 16.67% of the respondents of Darrang and 25.00% of the respondents of Nagaon had fishery as a major occupation. On an average, 57% of the respondents were engaged in agriculture followed by fishery (21%), business (17%) and service (5 %) as other occupations. It can be inferred that the majority of the respondents of both the districts had agriculture as a primary occupation along with fishery as one of the secondary activities. Since time requirement for fish culture is less, agriculture farmers can go for aquaculture practices during lean period without affecting their primary activities.

The distribution of respondents based on age, experience, social participation and training are given in Table 1.

Age

Age is an issue, which cannot be approached with cultural preconceptions about what the roles and need of specific age groups might be. A better understanding of the role of age in determining levels of economic and social participation may be of great importance when it comes to targeting interventions. Table 1 reveals that 45.00% of the total fish farmers belong to middle age group followed by younger (39.17%) and older age (15.83%) groups srespectively. In Nagaon district, 51.67% represented medium age group followed by 40% younger age group and 8.33% older age group.

However, younger age group and middle age group (38.33%) were equally distributed in Darrang district followed by 23.34% older age group. It could, therefore, be inferred that fishfarming practices in the two districts succeeded in attracting the interest of the new generation.

Experience

A perusal of Table 1 reveals that 77% of the total respondents belong to medium level of experience, *i.e.*, 8-16 years in composite fish culture, followed by higher level categories represented by 16.00% with more than 16 years of experience and lower level category (7.00%) with less than 8 years of experience in composite fish culture. In Darrang district, 67.00% of respondents were in the category of medium level experience, *i.e.*, 9-15 years, whereas 18.00% of the respondents have high-level

experience, *i.e.*, more than 15 years and 15.00% of the respondents have lower level experience of less than 9 years. Medium level experience category respondents of Nagaon district were represented by 73.00% of the total. However, 17.00% respondents have higher-level experience of more than 16 years, followed by lower level category (10.00%) with less than 8 years, experience in composite fish farming.

Social participation

Table 1 shows that the majority of the respondents of both the districts (78.00%) have medium level of social participation. This is followed by lower and higher level categories with percentages of 12.00 and 10.00 respectively. Farmers participated in social institutions like club, school, library, co-operatives and village welfare organizations.

Training

Training is an effective tool of transfer of technology. Even though training programmes are being organized by the Fish Farmer's Development Agencies and other organizations, the fish farmers were not willing to undergo training for fear of wage loss, lack of time and lack of incentives (Mahandrakumar, 1996). Majority of the respondents did not receive training on fishculture practices. The percentage of trained respondents in Darrang and Nagaon were 25 and 20, respectively.

Total family income

In general, employment and income are the twin decisive factors mostly used for determining the living standard of any community or region. Equitable distribution of income further enhances the social harmony among different sections of population. Analysis of income levels of the fishfarmer families in both the districts has brought out some interesting features. The classification of fish farmer families based on income level is given in Table 2.

The majority of the respondents, *i.e.*, 30.83% of Darrang and 37.50 % of Nagaon

Table 2 : Classification of respondents according to annual income in Darrang and Nagaon

Income level (Rs)	Darrang F (%)	Nagaon F (%)	Total F (%)
< 10,000	8(6.67)	6(5.00)	14(5.83)
10,000-15,000	12(10.00)	18(15.00)	30(12.50)
15,000-20,000	25(20.83)	9(7.50)	34(14.17)
20,000-30,000	37(30.83)	45(37.50)	82(34.17)
30,000-40,000	18(15.00)	21(17.50)	39(16.25)
40,000-50,000	8(6.67)	7(5.83)	15(6.25)
50,000-75,000	5(4.17)	(4.17)	10(4.17)
75,000-1,00,000	4(3.33)	4(3.33)	8(3.33)
> 100,000	3(2.50)	5(4.17)	8(3.33)

had annual income in the range of Rs 20,000 - 30,000: 20.83% of the respondents of Darrang had annual income in the range of Rs 15,000 - 20,000, whereas in Nagaon, 7.50% had this level of income. Relatively few fishfarmers of Darrang 6.67% and Nagaon 5% had an annual income of less than Rs 10,000. As a whole, the annual family income of fishfarmer household of Darrang and Nagaon was Rs 25,000 and Rs 32,000.00, respectively. This low level of income reflects in their poor economic condition, which was not sufficient to maintain their normal livelihood. They cannot afford much for fishculture activities.

Total family expenditure pattern

Most of the fish farmers were in the low-income group and found it difficult to meet even their consumption requirements from their earnings (Table 3). The average annual expenditure of a fishfarmer household works out at Rs 23,000 and Rs 31,000 in Darrang and Nagaon, respectively. A perusal of expenditure pattern clearly indicates that about 70% of the income of the respondents in Darrang and 66% in Nagaon was spent on their food alone. The clothing was found to be the next major item from expenditure point of view among the respondents of both the

Table 3 : Expenditure pattern (% of earnings) of fishfarmer households

Item	Darrang	Nagaon	Total
Food	70	66	67
Clothing	15	18	17
Education	7	5	6
Medical	5	8	7
Entertainment	1	1	1
Others	2	2	2

Table 4 : Relationship between selected socio-economic variables and adoption behaviour

Sl. No.	Variables	"r" value
1.	Knowledge	0.7016 *
2.	Age	-0.3108 *
3.	Education	0.0781 NS
4.	Experience	0.2570 **
5.	Size of pond	0.0133 NS
6.	Total family income	0.0686 *
7.	Social participation	-0.0311 NS
8.	Total family expenditure	0.0298 NS

*. Significant at 0.5% level
** Significant at 0.01% level

districts. The low level of expenditure on education (7% of earnings in Darrang and 5% of that in Nagaon) and medical (5% of earnings in Darrang and 8% of that in Nagaon) indicated their socio-economic backwardness. Choudhury (1989) revealed that income and family size were directly correlated. Family size and expenditure on food, cloth and fuel are reported to have direct bearing on the total monthly expenditure of fishermen households.

Relationship between socio-economic variables and adoption behaviour

The relationship between selected independent variables of respondents and their adoption level was worked out by computing correlation coefficients and tested their significance of difference at 1 or 5% level.

A perusal of Table 4 reveals that on pooled basis, total annual family income, knowledge and experience are positively and significantly correlated to adoption of fish culture, whereas age exhibits a negative significant relationship.

Social participation, size of pond, total family expenditure and education have no relationship with adoption. It can be inferred that young farmers with higher level of experience and income adopted more fish culture practices more. The findings are in conformity with those of Singh (1983), Das *et al.* (1988) and Mahandrakumar (1996).

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